But we must not forget that the science of language is still a young science. Its followers are still engaged in laying its foundations and testing their strength. The problems that await solution are numerous and important. So far as our evidence goes at present, it tends to show that the languages of the world have sprung from an infinite number of separate sources, but it remains to be seen whether future discoveries will not reverse this conclusion. Then, again, there is the question of roots. All comparative philologists admit that roots are the ultimate elements into which language can be decomposed, but it is still a question whether the roots discovered by the grammarian once formed a spoken language, or whether they are but grammatical figments which are the best representatives we can obtain of the early condition of speech. Equally disputed is the question whether the different classes of language—inflectional, agglutinative, polysynthetic, and isolating—are to be regarded as constituting separate streams of linguistic development from the first, or a single stream which has branched out into separate ones. It is unquestionable that a large part of flection can be shown to have had an agglutinative origin, it is also unquestionable that the phenomena of isolation are to be met with in the inflectional languages, and the phenomena of flection in the isolating languages; but it is asked whether this would have been possible if each class had not had a definite tendency to flection or isolation from its starting—a standard, that is, to which all foreign elements introduced into the language were made to conform. Such are some of the questions which still remain to be answered; and if we are to judge from the rapid progress already made by the science of language, the answers will not be long in coming.

A. H. SAYCE

OUR BOOK SHELF

Rudiments of Geology. By Samuel Sharp, F.S.A., F.G.S. Second Edition. (London: Edward Stanford, 1876.)

THE author of this little manual, which is designed for the use of schools and junior students, has evidently taken considerable pains to make his work fairly represent the existing state of geological knowledge. He has, moreover, succeeded in conveying in simple language an idea, not only of the conclusions attained, but of the processes of investigation and reasoning, followed by the geologist in his researches, and we regard the book as well adapted to introduce a beginner to the study of the science, and to prepare him for the profitable perusal of more extended treatises. As compared with some of the similar introductory text-books of the science, which have recently been published, Mr. Sharp's manual labours under the disadvantage of being somewhat inadequately illustrated, for we find in it only a few diagrams and no figures of fossils. This second edition, however, is certainly a considerable improvement upon the first, and the division of Physical Geology has received much more full and careful treatment; the extent of the additional matter being sufficient to increase the number of pages of the book from 126 to 204.

South Australia: its History, Resources, and Productions. Edited by William Harcus. Illustrated with photographs taken in the Colony. Published by authority of the Government of South Australia. (London: Sampson Low and Co., 1876.)

THE nature of this handsome volume may be learned from the fact that it has been prepared to accompany the specimens of South Australian products and industries sent to the Philadelphia Exhibition. It contains a vast amount of the most useful information on nearly all matters connected with the colony, gives an excellent idea of its present condition, and is likely to be of great use to intending settlers. Mr. Harcus, who edits the volume, writes also one half of it, treating of the social, political, and industrial aspects of the colony. In a series of valuable appendices, Dr. Schomburgk treats of the flora of South Australia, Mr. Waterhouse of its fauna, Mr. J. B. Austen of mines and minerals, while Mr. Josiah Boothby contributes a statistical sketch of the colony, and Mr. Charles Todd treats of its observatory and meteorology. There are two very useful maps, while the illustrations are nearly all good and interesting.

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.*]

The Spelling of the Name "Papŭa"

I QUITE agree with Mr. Whitmee's objections to English orthography of foreign words (see NATURE, vol. xiv. p. 48), but in this case I intended to show at a glance to *non-linguistic* readers that the accent in the word Papúa must be on the second syllable, and not on the first. The Germans write "Papua," and pronounce "Pápŭa" (as they pronounce "Mántŭa," "Pádŭa," &c.). This being wrong, and fancying that in England the same mistake is often made, I wrote "Papooa," which leaves no uncertainty in respect to pronunciation. I confess that it would have been more convenient to retain "Papua," and remark in a note that the accent must be on the "u." In a linguistic work I should never have proposed "Papooa," but it cannot be supposed that every reader of NATURE knows what Marsden pointed out in 1812. In German I write "Papúa," and perhaps the same mode would be the most convenient in English. It is known that the French use "Papoua," the Dutch "Papoea," the Malay "Papuwah." In these cases the pronunciation may not be questionable, as it is in German and English, if written "Papua."

The most interesting point in Mr. Whitmee's letter is, no doubt, the announcement of a comparative grammar and dictionary of all the principal Malayo-Polynesian dialects; and those interested in these studies will certainly be anxious to receive such a valuable increase to their knowledge.

Dresden, May 23 A. B. MEYER

New Zealand Prehistoric Skeleton

AMONG the "Notes" in NATURE, vol. xiii. p. 196, just come to hand, you give an extract from the Order Paper of the Legislative Council of New Zealand concerning the remains of a supposed "prehistoric man," regarding which a motion for an inquest was tabled by Mr. Walter Mantell. As you correctly report, this skeleton was excavated under my direction in the so-called Moa-bone Point Cave, but it was not found in the lower beds containing Moa-bones, but in a much more recent formation, and to which I assigned a comparatively modern date.

You state that "I hold strongly to the palæolithic age of the deposits," but I am at a loss to conceive what ground you have for such an assertion, and as I can only conclude that you received your information direct from New Zealand, I beg to forward you herewith for your perusal a copy of my paper reporting the excavations and my views thereupon.

With regard to the motion itself, which was treated throughout the colony as a joke, it is sufficient to state that Mr. Walter Mantell is the recognised jester of the Legislative Council, and that even science does not escape his attempted witticisms. I may add that the Hon. Dr. Pollen, the Premier of the Colony, also treated the motion as a joke, and offered Mr. Mantell the office of coroner for the proposed investigation.

Although Mr. W. Mantell, F.G.S., stated, when speaking on his motion (see Hansard, 1875, p. 548), that "*he gloried in the fact that he was not a scientific man, and he did hope he would be able to go to his grave without incurring that disgrace;*" never-

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theless, he is known to have his pet theories about the antiquity of the Moa, and is very impatient of any contradiction.

I have thought it right to offer this explanation in order to prevent your readers being misled on a subject of considerable scientific interest. JULIUS VON HAAST

Canterbury Museum, Christchurch, N.Z., March 14

Visibility of the Satellites of Uranus

THE question of the visibility of these satellites in telescopes of moderate dimensions has lately excited considerable attention, but it does not appear that this question can be settled by any amount of verbal discussion. I take the liberty, therefore, to propose two test objects by means of which any one can, I think, satisfy himself whether he can see these satellites or not.

1. The companion of Regulus, north, preceding, and distant about three minutes of arc, has itself a small companion, which was discovered by the late Prof. Winlock. Any one who can see this small companion may be certain that he can observe the two *outer* satellites of Uranus and the satellite of Neptune.

2. The star of fifth magnitude, A Leonis, has a companion discovered at the Naval Observatory by Mr. G. Anderson. Any one who can observe this companion can, I think, see the two *inner* satellites of Uranus when at their elongations.

Of course in the case of such faint objects very much depends on the condition of the atmosphere, but the above tests are very nearly correct. ASAPH HALL

Washington, May 14

Protective Resemblance in the Sloths

IN a note upon the above subject, dated December 29, 1875, which appeared in vol. xiii. p 187 of NATURE, I omitted to quote a passage from a letter written by Dr. Berthold Seemann to the late Dr. J. E. Gray (dated April 1, 1871), with regard to a specimen of *Arctopithecus*, of a well-marked green colour, obtained by the former naturalist in Nicaragua. Of this Sloth he says, *inter alia* :—"It should be borne in mind that it has almost exactly the same greyish-green colour as *Tillandsia usneoides*, the so-called 'vegetable horsehair' common in the district; and if it could be shown that it frequented trees covered with that plant (a point I hope to ascertain during my next visit in June next), there would be a curious case of mimicry between this Sloth's hair and the *Tillandsia*, and a good reason why so few of these sloths are seen." (Note on the species of *Bradypodida* in the British Museum, by Dr. J. E. Gray, F.R.S., *Proc. Zool. Soc.*, May 2, 1871.) It would be interesting to know whether Dr. Seeman succeeded in solving this question; I am, however, not aware of any later reference made by him to this subject.

I here take the opportunity of correcting two misprints in my former letter, both of them in the Latin quotations, viz., "cum" for "eum," after the word "velleri," in the first, and "coque" instead of "eoque" after the word "possint," near the end of the second passage. J. C. GALTON

OUR ASTRONOMICAL COLUMN

THE SECONDARY LIGHT OF VENUS.—During the next few weeks a very favourable opportunity will be afforded to observers in these latitudes for further examination of the planet Venus, with the view to a satisfactory solution of what must yet be regarded as a *questio vexata*—the visibility of that part of the disc, which is unillumined by the sun, as the planet approaches or recedes from the inferior conjunction.

The subject is treated in detail in a communication to the Bohemian Academy of Sciences, from Prof. Safarik of Prague, entitled "Über die Sichtbarkeit der dunklen Halbkugel des Planeten Venus," which appears in *Sitzungsberichte der k. böhmischen Gesellschaft der Wissenschaften*, July 18, 1873. The author has collected together the many scattered observations extending over upwards of one hundred and fifty years, and presents also an outline of the various explanations which have been put forward.

The earliest mention of the faint illumination of the dark side of Venus is by Derham, in a passage in his Astro-Theology, to which attention was first directed by Arago. Derham refers to the visibility of the obscure part of the globe "by the aid of a light of a somewhat dull and ruddy colour." The observation is not dated, but appears to have been prior to the year 1714. A friend of Derham's is also stated to have perceived the same illumination very distinctly.

The next observations are by Christfried Kirch, second astronomer of the Berlin Academy of Sciences, June 7, 1721, and March 8, 1726, and were found in his original papers and printed in *Ast. Nach.* No. 1586. The image on the first occasion was tremulous, but though he could hardly credit his vision, he appeared to discern the dark side of the planet. In 1726 he remarked that the dark periphery seemed to belong to a smaller circle than the illuminated one. Kirch observed with telescopes of sixteen and twenty-six feet focal length, powers 80 and 100. Two other persons confirmed his observation in 1726.

The next observation in order of date, was found by Olbers, in "Observationes Veneris Grypiswaldensis," cited by Schröter in his observations of the great comet of 1807. It was made by Andreas Mayer, Professor of Mathematics at Greiswald: on October 20, 1759, he observed the meridian passage of the planet, then at a south declination of 21½°, with a six-foot transit instrument by Bird, power not much over 50, and has the remark—"Etsi pars lucida Veneris tenuis admodum erat, nihilominus integer discus apparuit, instar lunæ crescentis quæ acceptum a terra lumen reflectit." As Prof. Safarik justly observes, considering the circumstances under which Mayer's observation was made with the planet only 10° from the sun, and not more than 14° above the horizon, the phenomenon on this occasion must have had a most unusual intensity.

It does not appear that Sir W. Herschel at any time perceived the secondary light of Venus, though he remarked the extension of the horns beyond a semi-circle.

Von Hahn, at Remplin, in Mecklenberg, the possessor of excellent telescopes by Dollond and Herschel, was fortunate in viewing the dark side of Venus on frequent occasions during the spring and summer of the year 1793, and he is considered by Safarik to have witnessed the illumination of this part of the disk under more varying conditions than any other observer. The light is described as grey verging upon brown. Von Hahn's observations were made with various instruments and at different hours of the day.

Schröter, at Lilienthal, on several occasions between the years 1784 and 1795, had remarked in full sunshine the extension of the horns of the crescent many degrees beyond the semicircle, the borders of the dark hemisphere being faintly illuminated with a dusky grey light; but on February 14, 1806, at 7 P.M., he saw for the first time the whole of the dark side, as he expressed it, "in äusserst mattem dunkeln Lichte." The sharply-defined contour had an ash-coloured light; the surface was more dimly illuminated. Schröter, in recording this observation, expresses his surprise that during the many years he had observed the planet, part of the time with his 27-feet reflector, with the full aperture of 20 inches, he had not previously perceived the whole of the dark side, but he was satisfied there was no illusion. At this time one-eighth of the diameter of Venus, about 48″, was fully illuminated, the planet casting a very sensible shadow.

Harding, observing at Göttingen on January 24 of the same year, with a 10-feet Herschelian reflector, power 84, and full aperture of 9 inches, saw the whole dark side of Venus shining with a pale ash-coloured light, very distinctly perceived against the dark ground of the sky. The appearance was too evident to allow of the suspicion of an illusion; it was the same in all parts of the field of

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